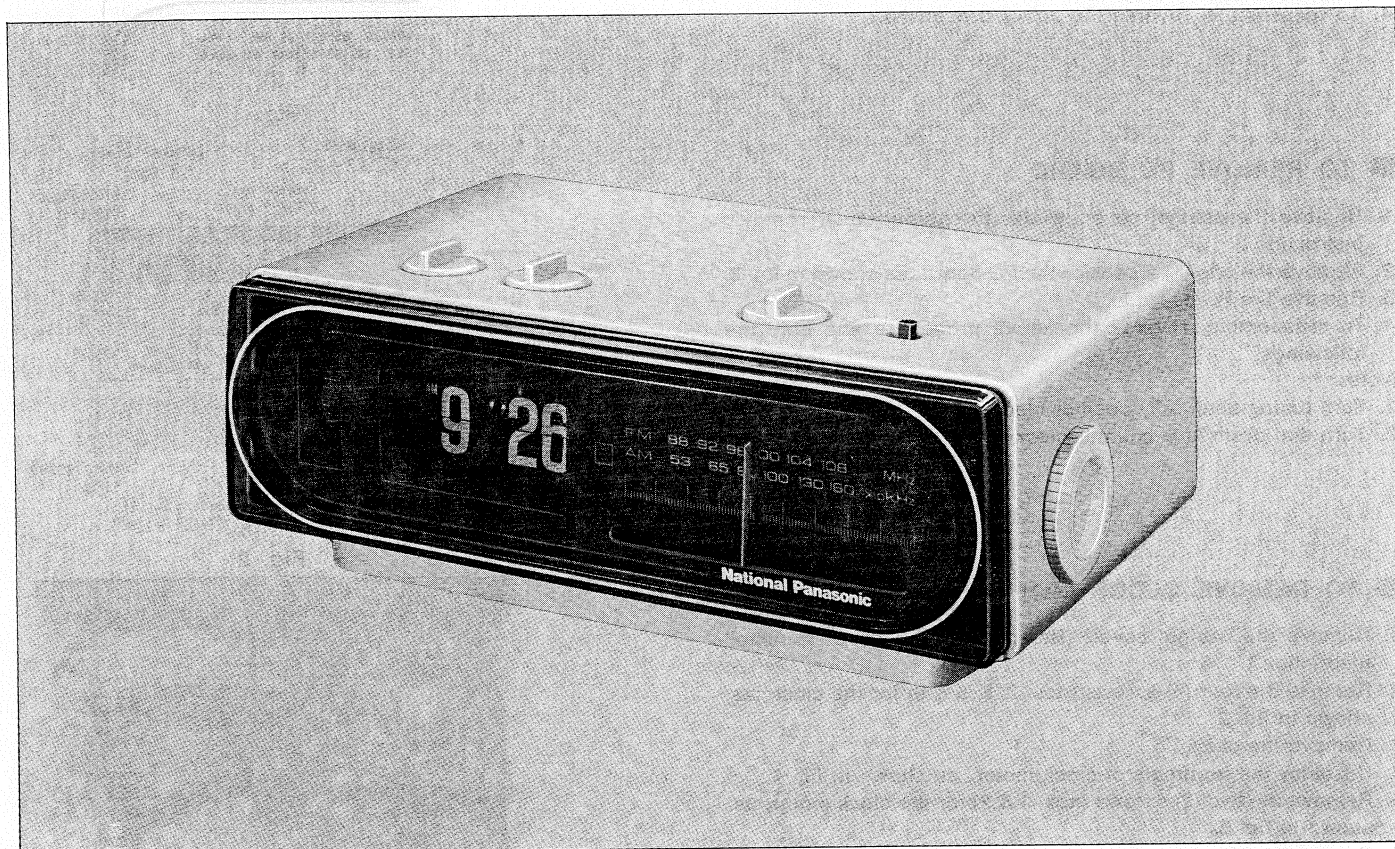


Service Manual

FM-AM
DIGITAL CLOCK RADIO

Radio
RC-6010B/BA



■ SPECIFICATIONS

Frequency Range: FM 88~108 MHz
AM 525~1605 kHz (571~187 m)

Intermediate Frequency: FM 10.7 MHz
AM 455 kHz

Sensitivity: FM $5\mu\text{V}$ for 50 mW Output
AM $100\mu\text{V/m}$ for 50 mW Output

Power Output: Max 500 mW

Power Source: AC 110~125/220~240V 50/60 Hz
(RC-6010B)
240V 50 Hz (RC-6010BA)

Power Consumption: 3W

Speaker: 8 cm (3") PM Dynamic Speaker

Dimensions: 260(Wide) × 99(High) × 148(Deep) mm
(10 $\frac{1}{4}$ " × 3 $\frac{15}{16}$ " × 5 $\frac{7}{8}$ ")

Weight: 1.5 kg (3 lb. 5 oz.)

Impedance: Speaker 32 Ω

Specifications are subject to change without notice for further improvement.

 **National Panasonic**

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

■ TO REMOVE CABINET COVER

DO NOT REMOVE CABINET COVER UNLESS CONTROL KNOBS FOR THE SET TIME, SET ALARM, SLEEP, SELECTOR, TUNING AND VOLUME) REMOVED.

- 1. Remove the six (6) knobs for the set time, set alarm, sleep, selector, tuning and volume. (To remove those control knobs, wind a cord around the control and pull it outward as shown in fig. 1.)
- 2. Remove the six (6) screws (nos. 1, 4, 5, 6, 7 & 10) for the cabinet cover, as shown in fig. 2.
- 3. Remove the cabinet cover.
- 4. To reassemble, reverse the above procedure.

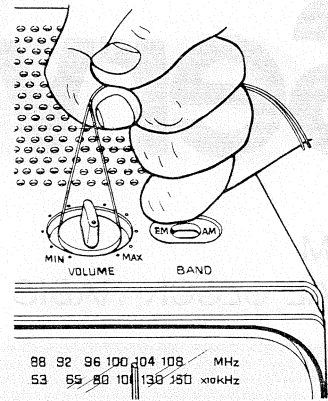


Fig. 1

■ TO REMOVE PC BOARD

- 1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
- 2. Remove the one (1) screw for the PC board, as shown in fig. 3.
- 3. Remove the PC board.
- 4. To reassemble, reverse the above procedure and note the followings.

Notes:

- 1. Turn tuning shaft fully counter-clockwise.
- 2. Turn dial drum fully counter-clockwise.

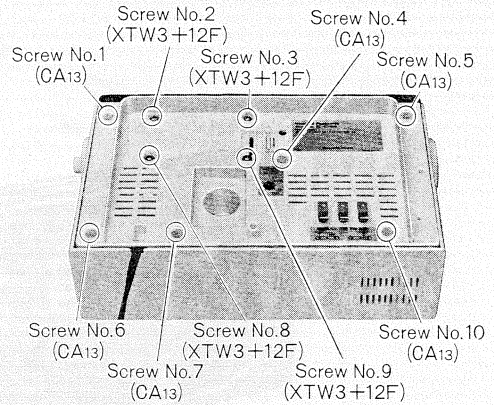


Fig. 2

■ TO REMOVE CLOCK MOTOR

- 1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
- 2. Remove the four (4) screws (nos. 2, 3, 8 & 9) for the clock, as shown in fig. 2.
- 3. Remove the clock.
- 4. Unsolder the terminals of clock motor, as shown in fig. 4.
- 5. Remove the two (2) screws (nos. 1 & 2) for the clock motor, as shown in fig. 5.
- 6. Remove the clock motor.
- 7. To reassemble, reverse the above procedure.

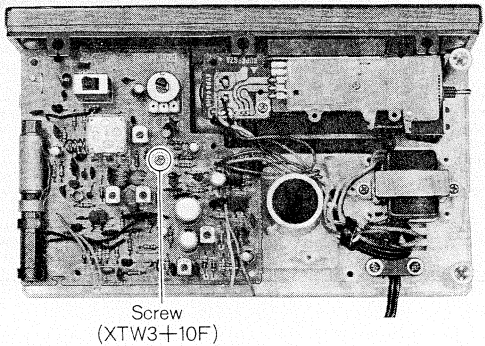


Fig. 3

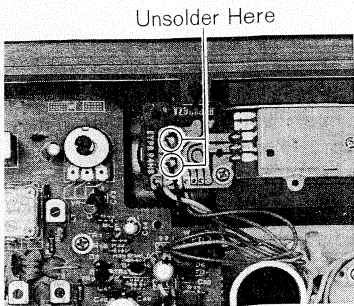


Fig. 4

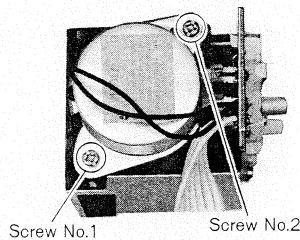


Fig. 5

■ ALIGNMENT INSTRUCTIONS

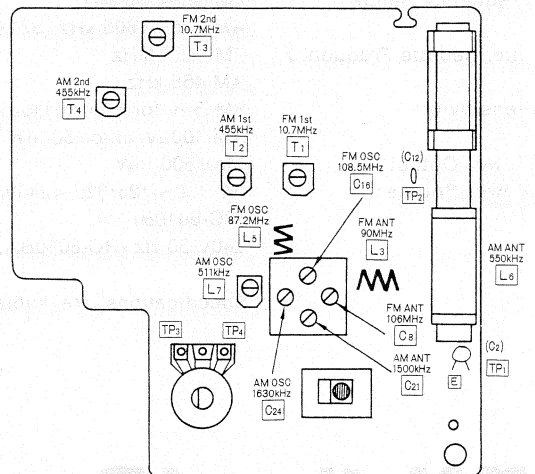


Fig. 6

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Notes : 1. Set volume control to maximum. 2. Set band selector switch to AM or FM 3. Set selector to ON.		4. Set power source voltage to 117/230 (RC-6010B), 240V (RC-6010BA) volts AC. 5. Output of signal generator should be no higher than necessary to obtain an output reading.			
SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
CONNECTIONS	FREQUENCY				
AM-IF ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz)	Output meter across voice coil.	T ₂ (1st IFT) T ₄ (2nd IFT) Adjust for maximum output.
AM-RF ALIGNMENT					
(2)	"	511 kHz	Tuning capacitor fully closed.	"	L ₇ (OSC Coil) "
(3)	"	550 kHz	Tune to signal.	"	(*)L ₆ (ANT Coil) Adjust for maximum output. Adjust L ₆ by moving coil bobbin along ferrite core.
(4)	"	1630 kHz	Tuning capacitor fully open.	"	C ₂₄ (OSC Trimmer) Adjust for maximum output.
(5)	"	1500 kHz	Tune to signal.	"	C ₂₁ (ANT Trimmer) Adjust for maximum output. Repeat steps (2)~(5).
(*1) Cement antenna bobbin with wax after completing alignment.					
FM-IF ALIGNMENT					
(6)	High side thru. 0.001 μ F to point TP₂ . Negative side to point E .	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point TP₃ . Negative side to point TP₄ .	T ₁ (FM 1st IFT) Adjust for maximum amplitude. (Refer to fig. 7).
(7)	"	"	"	"	T ₃ (FM 2nd IFT) Adjust for maximum amplitude. (Refer to fig. 8.)
FM-RF ALIGNMENT					
(8)	Connect point TP₁ through FM dummy antenna. Negative side to point E . (Refer to fig. 9.)	87.2 MHz	Tuning capacitor fully closed.	Output meter across voice coil.	L ₅ (OSC Coil) (*2) Adjust for maximum output.
(9)	"	90 MHz	Tune to signal.	"	L ₃ (ANT Coil) "
(10)	"	108.5 MHz	Tuning capacitor fully open.	"	C ₁₆ (OSC Trimmer) "
(11)	"	106 MHz	Tune to signal.	"	C ₈ (ANT Trimmer) (*2) Adjust for maximum output. Repeat steps (8)~(11).
(*2) Three output responses will be present; proper tuning is the center frequency.					

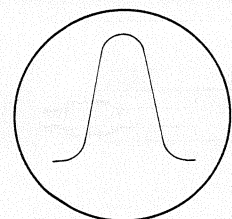


Fig. 7

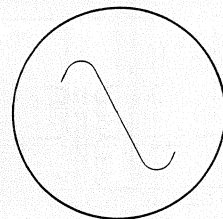


Fig. 8

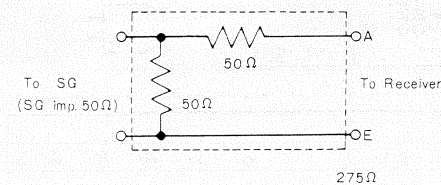


Fig. 9 FM Dummy Antenna

■ CABINET PARTS LOCATIONS

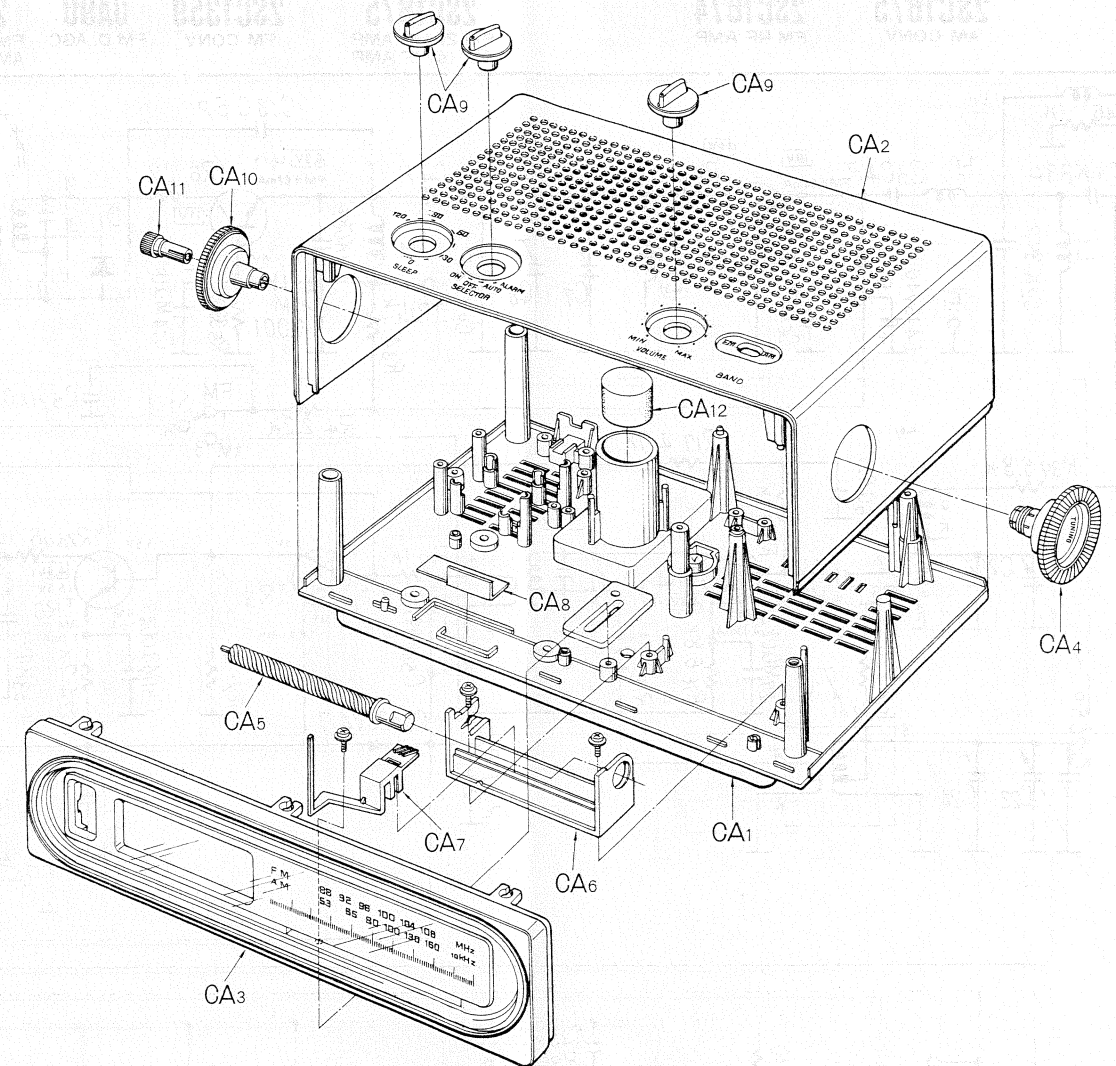


Fig. 10

■ CHASSIS PARTS LOCATIONS

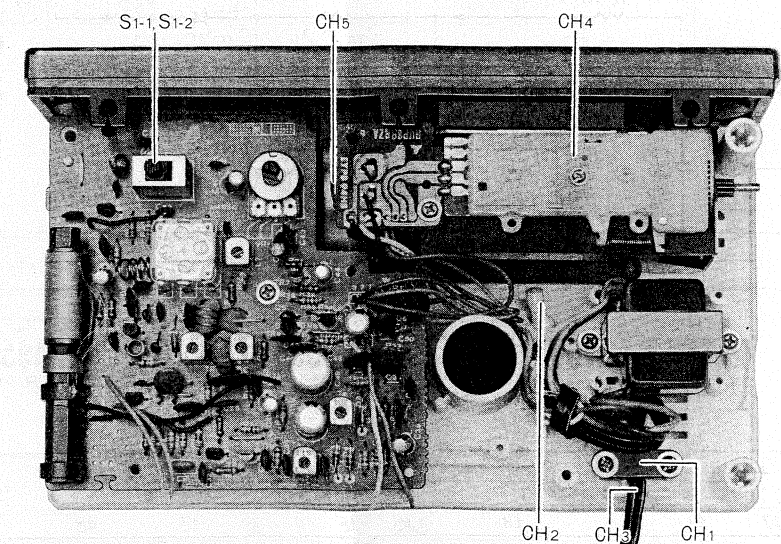
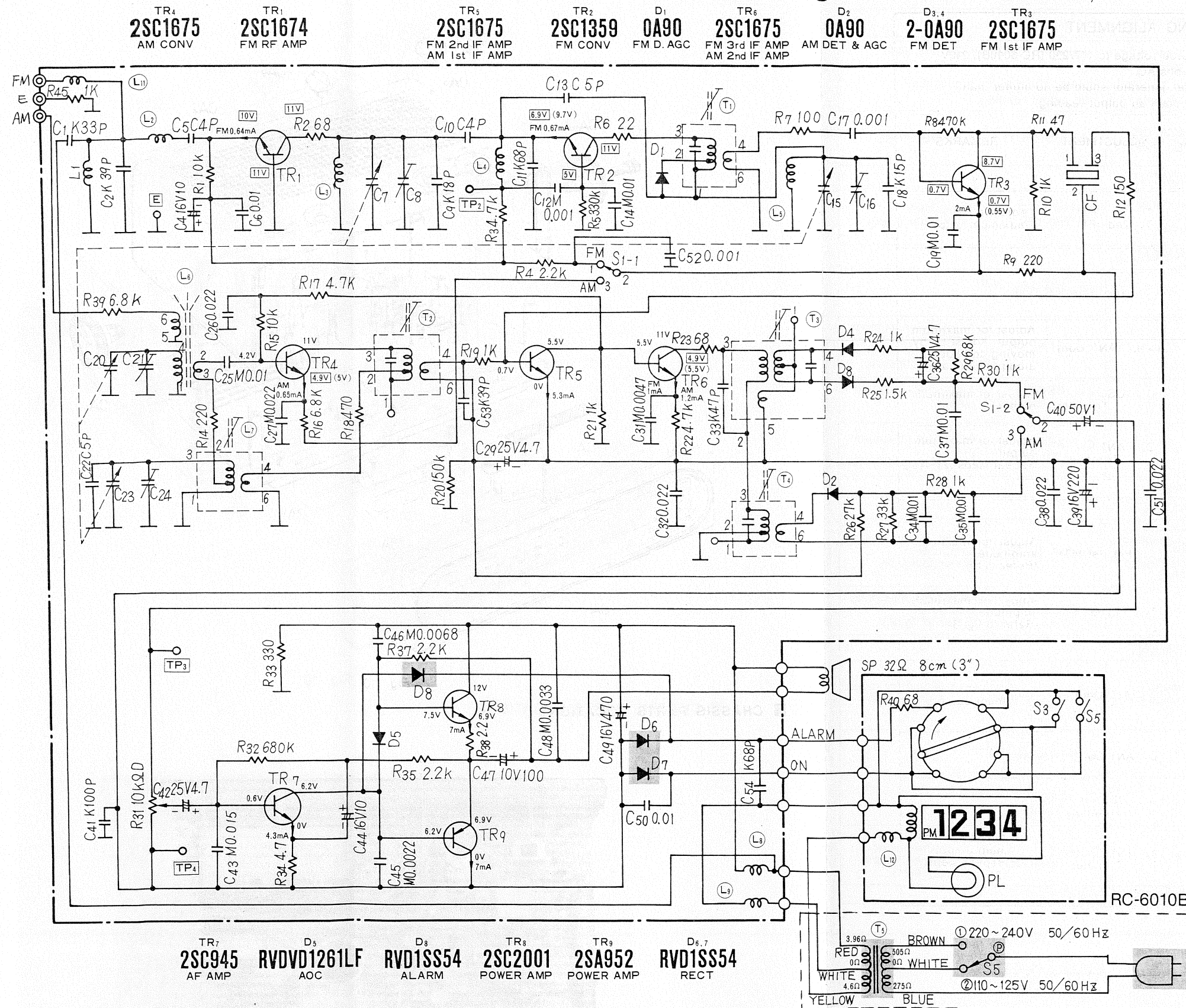


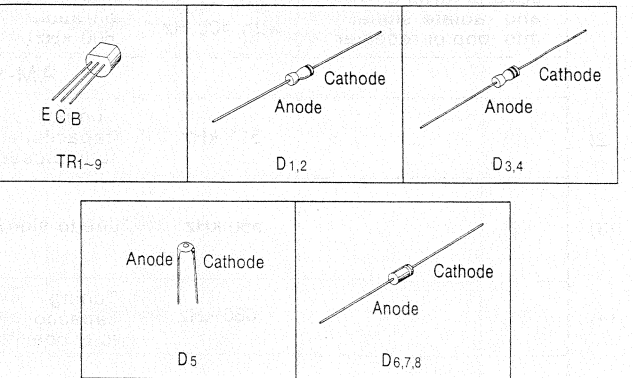
Fig. 11

Schematic Diagram - Model RC-6010B/BA



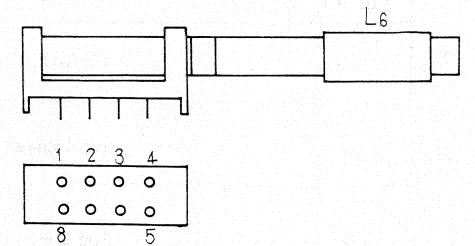
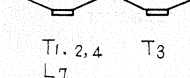
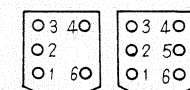
Notes:

1. S₁₋₁, S₁₋₂: Band switch in "FM" position.
2. S₂: Selector in "OFF" position.
3. S₃: Sleep switch.
4. S₄: Auto switch.
5. S₅: Voltage selector in "110~125V" position. (RC-6010B)
6. DC voltage measurements are taken with circuit tester 10K Ω /V from negative voltage line.

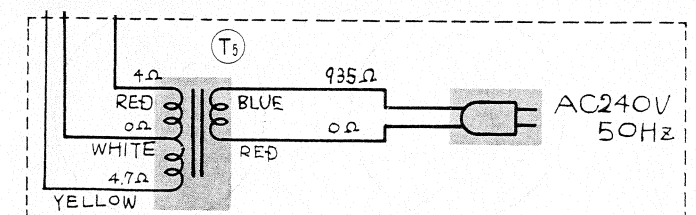


IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

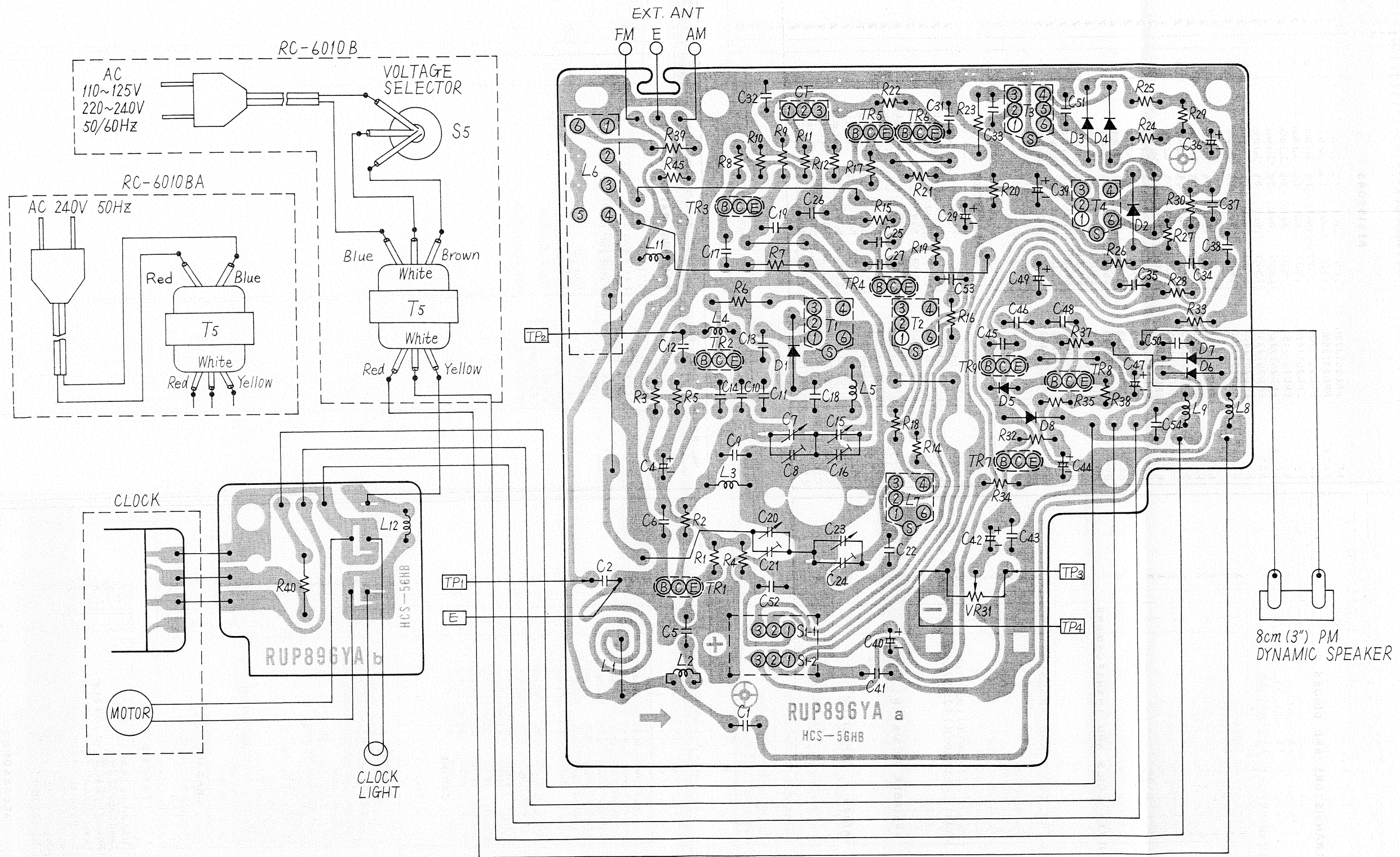


RC-6010BA



C	1	2	4	5	6	7	8	9	10	11	12	13	14	52	15	16	17	18	19	34	35	36	37	38	39	40
	20	21	22	23	24	25	26	27	53	29	31	32	33	34	35	36	37	38	39	40						
	41	42	43	44	45	46	47	48	49	50	54															
R	45	1	2	3	4	5	6	7	8	9	10	11	12													
	39	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
	31	32	33	34	35	37	38	40																		

Circuit Board Wiring View—Model RC-6010B/BA



TR&D											TR ₁	TR ₂	TR ₃	D ₁	TR ₅	TR ₄	TR ₆	D ₅	TR ₉	TR ₇	D ₈	TR ₈	D ₃	D ₄	D ₂	D ₆	D ₇									
T&L	T ₅										L ₁₂			T ₅	L ₆			L ₁	L ₁₁	L ₂	L ₄		L ₃	T ₁			L ₅	L ₇		T ₂	T ₃		T ₄	L ₉		L ₈

TR₁

	FM
C	11V
B	11V
E	10V
Ie	0.64mA

TR₂

FM	AM
C	11V —
B	5V —
E	6.9V 9.7V
Ie	0.76mA —mA

TR₃

FM	AM
C	8.7V —
B	0.7V —
E	0.7V 0.95V
Ie	2mA 2mA

TR₄

FM	AM
C	11V 11V
B	4.2V 4.2V
E	4.9V 5V
Ie	—mA 0.65mA

TR₅

C	5.5V
B	0.7V
E	0V
Ie	5.3mA

TR₆

FM	AM
C	11V 11V
B	5.5V 5.5V
E	4.9V 5.5V
Ie	1mA 1.2mA

TR₇

C	6.2V
B	0.6V
E	0V
Ie	4.3mA

TR₈

C	12V
B	7.5V
E	6.9V
Ie	7mA

TR₉

C	0V
B	6.2V
E	6.9V
Ie	7mA

REPLACEMENT PARTS LIST.....Model RC-6010B/BA (RD7806-1602)

NOTES: 1.Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2.X - Z rank: X rank parts will cover 80% of repair needs. X + Y rank parts will cover 95% of repair needs.
3. Components identified by shaded are have special characteristic important for safety. When replacing any of these components use only manufacturer's specified parts.
4. Part numbers shown in bold letters are service standard parts and may differ from production parts.
5.The O mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
TRANSISTORS AND DIODES				
TR1	2SC1674	Transistor (Si), FM RF Amp.	1	X
TR2	2SC1359	Transistor (Si), FM Converter	1	X
TR3,4,5,6	2SC1675	Transistor (Si), FM IF Amp., AM Converter, FM/AM IF Amp.	4	X
TR7	2SC945	Transistor (Si), AF Amp.	1	X
TR8	2SC2001	Transistor (Si), Power Amp.	1	X
TR9	2SA952	Transistor (Ge), Power Amp.	1	X
D1,2	OA90M	Diode (Ge), FM D.A.G.C., AM Detector & AGC	2	X
D3,4	2-OA90	Diode (Ge), FM Detector	1Pair	X
D5	RVDVD1261	Diode (Si), Operation Compensator	1	X
D6,7,8	SM112	Diode (Si), Rectifier, Alarm	3	X
CERAMIC FILTER, COILS AND TRANSFORMERS				
CF	RVFSFEL07MSA	Ceramic Filter	1	X
L3	RLD4Y54	Coil, FM Tuning	1	X
L5	RLD4Y53	Oscillator Coil, FM	1	X
L6	RLF2V152	Antenna Coil, AM	1	X
L7	RLO2M10	Oscillator Coil, AM	1	X
T1	RLI4M101	IFT, FM	1	X
T2	RLI2M207	IFT, AM	1	X
T3	RLI4M511	IFT, FM	1	X
T4	RLI2M404	IFT, AM	1	X
T5	RLT5J221	Power Transformer (RC-6010B only)	1	X
T5	RLT5J220	Power Transformer (RC-6010BA only)	1	X
VARIABLE RESISTOR				
R31	EVHLOAF25D14	Variable Resistor, 10KΩ (D), Volume	1	X
VARIABLE CAPACITOR				
C7,15,20,23	PVC2LXL20T5M	Tuning Capacitor, W/Trimmer Capacitor (C8,16,21,24)	1	X

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C48	ECKDIH332MD	0.0033μF, 50WV, ±20%, Ceramic	1	Z
C12	ECKDIH102MD	0.001μF, 50WV, ±20%, Ceramic	1	Z
C31	ECKDIH472MD	0.0047μF, 50WV, ±20%, Ceramic	1	Z
C46	ECKDIH682MD	0.0068μF, 50WV, ±20%, Ceramic	1	Z
C14,19,25,34,35,37	ECKDIH103MD	0.01μF, 50WV, ±20%, Ceramic	6	Z
C27	ECKDIH153MD	0.015μF, 50WV, ±20%, Ceramic	1	Z
C32	ECKDIH223MD	0.022μF, 50WV, ±20%, Ceramic	1	Z
C47	ECEA1AS101	100μF, 10WV, Electrolytic	1	Y
C4,44	ECEA1HS100	10μF, 50WV, Electrolytic	2	Y
C39	ECEA1CS221	220μF, 16WV, Electrolytic	1	Y
C49	ECEA1CS471	470μF, 16WV, Electrolytic	1	Y
C29,36,42	ECEA1JS4R7	4.7μF, 63WV, Electrolytic	3	Y
C40	ECEA2AS010	1μF, 100WV, Electrolytic	1	Y
CABINET				
CA1	RYMC6010BXKS	Cabinet Assembly (RC-6010B only)	1	X
CA1	RYMC6010BAXA	Cabinet Assembly (RC-6010BA only)	1	X
CA2	RKF387X	Cabinet Cover	1	X
CA3	RYPC6010BXKS	Front Panel Assembly	1	X
CA4	RYTC6010MKSN	Knob Assembly, Tuning	1	X
CA5	RDG5669Z	Shaft, Tuning	1	OY
CA6	RUG64Z	Guide, Dial Pointer	1	OZ
CA7	RD752Z	Pointer Dial	1	OY
CA8	RDH141Z	Reflection Plate	1	OZ
CA9	RBS116Z	Knob, Selector, Volume & Sleep	3	OZ
CA10	RBW120Y	Knob, Alarm Set	1	X
CA11	RBW121Y	Knob, Time Set	1	X
CA12	RHG455Z	Rubber Cushion, Speaker	1	OZ
CA13 (Fig.2)	XTB3+35G	Screw, Cabinet Cover M'tg	6	Z
	RJF1065Z	Terminal, EXT. Antenna	3	Y
CHASSIS				
CH1	XAMR58S150	Pilot Lamp, Clock, 14V, 50mA	1	X
CH2	RMP112Z	Holder, Pilot Lamp	1	OZ
CH3	XYN26+E6	Screw, Pilot Drum	1	Z
CH4	RDG5651Z	Drum, Dial	1	OY
CH5	RHR134Z	Grommet, AG Cord	1	OY
CH2	RHR108A	Lead Cap, AG Cord	2	Z
CH3	RJA52Z	Power Cord, AG (RC-6010B only)	1	X
CH3	RJA44Z	Power Cord, AG (RC-6010BA only)	1	X
CH4	RSC12540Z	Clock Assembly, 50/60Hz	1	OZ
CH5	RMN179Z	Motor, AC 10V, 50/60Hz	1	X
	RUV426Z	Cover, Voltage Selector (RC-6010B only)	1	Z
ACCESSORY				
	RJF120Z/S	Plug, AC Power Cord (RC-6010B only)	1	Y

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
SPEAKER				
SP	EAS8P01AM	Speaker, Imp. 32Ω, 8cm (3"), PM Dynamic	1	OX
SWITCHES				
SI-1, SI-2	RSS2B03Z	Switch, Band	1	OX
S5	RSR2A01Z	Switch, Voltage Selector (RC-6010B only)	1	X
RESISTORS				
R6	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Z
R23,40	ERD25TJ680	68Ω, ¼Watt, ±5%, Carbon	2	Z
R2,7	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	2	Z
R11	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Z
R12	ERD25TJ151	150Ω, ¼Watt, ±5%, Carbon	1	Z
R9,14	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	2	Z
R33	ERD25TJ331	330Ω, ¼Watt, ±5%, Carbon	2	Z
R18	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Z
R10,19,21,24,28,30,45	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	7	Z
R25	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Z
R4,37	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	2	Z
R3,17,22	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	3	Z
R16,29,39	ERD25TJ682	6.8KΩ, ¼Watt, ±5%, Carbon	3	Z
R1,15	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	2	Z
R35	ERD25TJ223	22KΩ, ¼Watt, ±5%, Carbon	2	Z
R26	ERD25TJ273	27KΩ, ¼Watt, ±5%, Carbon	1	Z
R27	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Z
R20	ERD25TJ154	150KΩ, ¼Watt, ±5%, Carbon	1	Z
R5	ERD25TJ334	330KΩ, ¼Watt, ±5%, Carbon	1	Z
R8	ERD25TJ474	470KΩ, ¼Watt, ±5%, Carbon	1	Z
R32	ERD25TJ684	680KΩ, ¼Watt, ±5%, Carbon	1	Z
R38	ERD25TJ2R2	2.2Ω, ¼Watt, ±5%, Carbon	1	Z
R34	ERD25TJ4R7	4.7Ω, ¼Watt, ±5%, Carbon	1	Z
CAPACITORS				
C5,10	EGCD1H040G	4PF, 50WV, ±0.25PF, Ceramic	2	Z
C13,22	EGCD1H050CG	5PF, 50WV, ±0.25PF, Ceramic	2	Z
C18	EGCD1H150KC	15PF, 50WV, ±10%, Ceramic	1	Z
C9	EGCD1H180KC	18PF, 50WV, ±10%, Ceramic	1	Z
C1	EGCD1H330KG	33PF, 50WV, ±10%, Ceramic	1	Z
C2,53	EGCD1H390KC	39PF, 50WV, ±10%, Ceramic	2	Z
C33	EGCD1H470KC	47PF, 50WV, ±10%, Ceramic	2	Z
C11,54	EGCD1H680K	68PF, 50WV, ±10%, Ceramic	1	Z
C41	EGCD1H101K	100PF, 50WV, ±10%, Ceramic	1	Z
C17,52	EGCD1H102ZF	0.001μF, 50WV, ±8%, Ceramic	2	Z
C6,50	EGCD1H103ZF	0.01μF, 50WV, ±25%, Ceramic	2	Z
C26,32,38,51	EGCD1H223ZF	0.022μF, 50WV, ±8%, Ceramic	4	Z
C45	EGCD1H222MD	0.0022μF, 50WV, ±20%, Ceramic	1	Z

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
PACKING MATERIALS				
	RPK604Z	Gift Box	1	OY
	RPN9267Z	Pad Complete	1	OZ
	(Not Available, Order	Pad, Left Side	(1)	
	(RPN9267Z	Pad, Right Side	(1)	
	RQX6257Z	Instruction Book	1	OY